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PATENT
2459-1-003CIP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Zhou, Ming-Ming et al.
SERIAL NO. : 09/784,553 EXAMINER : Unassigned
FILED : February 16, 2001 ART UNIT : Unassigned
FOR : METHODS OF IDENTIFYING MODULATORS OF
BROMODOMAINS

Certificate of Mailing Under 37 CFR 1.8

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Anne M. Jones

(Name of Person Depositing Mail)

(Signature and Date)

Anne M. Jones 4/7/03

STATEMENT IN SUPPORT OF THE FILING/SUBMISSION OF A
NUCLEOTIDE/AMINO ACID SEQUENCE LISTING IN
ACCORDANCE WITH 37 CFR §1.821 - 1.825

U.S. PATENT AND TRADEMARK OFFICE
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Dear Sir:

VERONICA MALLON, Ph.D., agent of record, hereby states as follows:

1. I hereby state that the content of the paper and computer readable copies of the Sequence Listing submitted in accordance with 37 CFR §1.821(c) and (e), respectively, are the same.
2. I hereby state that the submission, filed in accordance with 37 CFR §1.821(g) herein does not include new matter.

Veronica Mallon
VERONICA MALLON, Ph.D.
Agent for Applicant(s)
Registration No. 52, 491

Dated: April 7, 2003



SEQUENCE LISTING

10> Zhou, Ming-Ming
 Aggarwal, Aneel
 120> Methods of Identifying Modulators of Bromodomains
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 <140> 09/784,553
 <141> 2001-02-16
 <150> 09/510,314
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50 55 60
Glu Gly Pro Gly Gly Gly Ser Ala Arg Ile Ala Val Lys Lys Ala
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Gln Leu Arg Ser Ala Pro Arg Ala Lys Lys Leu Glu Lys Leu Gly Val
85 90 95
Tyr Ser Ala Cys Lys Ala Glu Glu Ser Cys Lys Cys Asn Gly Trp Lys
100 105 110
Asn Pro Asn Pro Ser Pro Thr Pro Pro Arg Ala Asp Leu Gln Gln Ile
115 120 125
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130 135 140
Ala His Val Ser His Leu Glu Asn Val Ser Glu Glu Glu Met Asn Arg
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Lys Glu Glu Asp Ala Asp Thr Lys Gln Val Tyr Phe Tyr Leu Phe Lys
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Leu Leu Arg Lys Ser Ile Leu Gln Arg Gly Lys Pro Val Val Glu Gly
195 200 205

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 Tyr Trp His Leu Glu Ala Pro Ser Gln Arg Arg Leu Arg Ser Pro Asn
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 Asp Asp Ile Ser Gly Tyr Lys Glu Asn Tyr Thr Arg Trp Leu Cys Tyr
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 Asp Ser His Val Leu Glu Glu Ala Lys Lys Pro Arg Val Met Gly Asp
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 Ile Pro Met Glu Leu Ile Asn Glu Val Met Ser Thr Ile Thr Asp Pro
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 Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr
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 Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr
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 Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys
 660 665 670
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 Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met
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 Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser
 770 775 780
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<212> PRT
<213> Artificial Sequence

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<223> Xaa is a maximum of three amino acids. Each of these can be any
amino acid. One may be missing.

<220>
<221> Xaa
<222> (4)..(11)
<223> Xaa is a maximum of eight amino acids. Each of these can be any
amino acid. One, two, or three may be missing.

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<221> Xaa
<222> (5)..(5)
<223> Xaa is a single amino acid that is either Pro, Lys, or His.

<220>
<221> Xaa
<222> (6)..(6)
<223> Xaa is any single amino acid.

<220>
<221> Xaa
<222> (8)..(8)
<223> Xaa is a single amino acid that can be either Tyr, Phe, or His.

<220>
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<222> (9)..(13)
<223> Xaa is 5 amino acids. Each of these can be any amino acid.

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<222> (11)..(11)
<223> Xaa is a single amino acid that can be either Met, Ile, or Val.

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 <223> Xaa represents an acetyl-lysine

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<210> 5
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<220>
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 <223> Xaa represents an acetyl lysine.

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 <212> PRT
 <213> Homo sapiens, bromodomain peptide

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 35 40 45
 Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr
 50 55 60
 Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn
 65 70 75 80
 Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn
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 Ile Leu Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly
 100 105 110

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 <211> 110
 <212> PRT
 <213> Homo sapiens

<400> 8

Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Thr Leu Lys Asn
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 20 25 30
 Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe
 35 40 45
 Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr
 50 55 60
 Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn
 65 70 75 80
 Cys Arg Glu Tyr Asn Pro Pro Asp Ser Glu Tyr Cys Arg Cys Ala Ser
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 Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly
 100 105 110

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 <212> PRT
 <213> Tetrahymena thermophila

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 20 25 30

Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro
35 40 45

Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val
50 55 60

Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala
65 70 75 80

Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu
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Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys
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<210> 10

<211> 109

<212> PRT

<213> Saccharomyces cerevisiae

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Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro
35 40 45

Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln
50 55 60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys
65 70 75 80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg
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<210> 11

<211> 112

<212> PRT

<213> Homo sapiens

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35 40 45

Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe
 65 70 75 80

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 85 90 95

Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
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<211> 112

<212> PRT

<213> Homo sapiens

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 35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe
 65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
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Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
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<210> 13

<211> 112

<212> PRT

<213> Mus musculus

<400> 13

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Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe
65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
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<211> 111
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<213> Caenorhabditis elegans

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20 25 30

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35 40 45

Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln
50 55 60

Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp
65 70 75 80

Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly
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Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met
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<210> 15
<211> 110
<212> PRT
<213> Homo sapiens

<400> 15

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Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
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<211> 110

<212> PRT

<213> Mesocricetus auratus

<400> 16

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20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
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<210> 17

<211> 111

<212> PRT

<213> Homo sapiens

<400> 17

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20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

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85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
 100 105 110

<210> 18
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 <212> PRT
 <213> Mesocricetus auratus

<400> 18

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 20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
 35 40 45

Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
 50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
 65 70 75 80

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 85 90 95

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 100 105 110

<210> 19
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 <212> PRT
 <213> Homo sapiens

<400> 19

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 20 25 30

Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45

Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr
 50 55 60

Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
 65 70 75 80

Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
 85 90 95

Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro
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<400> 20

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20          25          30

Val Asp Ala Ile Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
35          40          45

Asn Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
50          55          60

Tyr Trp Ser Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
65          70          75          80

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20          25          30

Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
35          40          45

Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
50          55          60

Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn
65          70          75          80

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100         105         110

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<210> 22
 <211> 109

<212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 22

```

Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys
1          5          10          15
Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp
20          25          30
Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro
35          40          45
Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu
50          55          60
Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser
65          70          75          80
Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn
85          90          95
Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro
100          105

```

<210> 23
 <211> 113
 <212> PRT
 <213> *Homo sapiens*

<400> 23

```

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu
1          5          10          15
Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
20          25          30
Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile
35          40          45
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn
50          55          60
Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met
65          70          75          80
Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
85          90          95
Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met
100          105          110

```

Pro

<210> 24
 <211> 113

<212> PRT
<213> Homo sapiens

<400> 24

Lys Lys Gly Lys Leu Ser Glu His Leu Arg Tyr Cys Asp Ser Ile Leu
1 5 10 15
Arg Glu Met Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
20 25 30
Lys Pro Val Asp Ala Glu Ala Leu Glu Leu His Asp Tyr His Asp Ile
35 40 45
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Asp Gly
50 55 60
Arg Glu Tyr Pro Asp Ala Gln Gly Phe Ala Ala Asp Val Arg Leu Met
65 70 75 80
Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Glu Val Val Ala
85 90 95
Met Ala Arg Lys Leu Gln Asp Val Phe Glu Met Arg Phe Ala Lys Met
100 105 110
Pro

<210> 25
<211> 113
<212> PRT
<213> Drosophila melanogaster

<400> 25

Asn Lys Glu Lys Leu Ser Asp Ala Leu Lys Ser Cys Asn Glu Ile Leu
1 5 10 15
Lys Glu Leu Phe Ser Lys Lys His Ser Gly Tyr Ala Trp Pro Phe Tyr
20 25 30
Lys Pro Val Asp Ala Glu Met Leu Gly Leu His Asp Tyr His Asp Ile
35 40 45
Ile Lys Lys Pro Met Asp Leu Gly Thr Val Lys Arg Lys Met Asp Asn
50 55 60
Arg Glu Tyr Lys Ser Ala Pro Glu Phe Ala Ala Asp Val Arg Leu Ile
65 70 75 80
Phe Thr Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
85 90 95
Met Gly Arg Lys Leu Gln Asp Val Phe Glu Met Arg Tyr Ala Asn Ile
100 105 110
Pro

<210> 26

<211> 113
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 26

```

Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu
1          5          10          15

Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu
          20          25          30

Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Ser Phe Asp Tyr
          35          40          45

Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp
          50          55          60

Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val
65          70          75          80

Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met
          85          90          95

Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg
          100          105          110
  
```

Pro

<210> 27
 <211> 108
 <212> PRT
 <213> *Homo sapiens*

<400> 27

```

Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu
1          5          10          15

Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val
          20          25          30

Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met
          35          40          45

Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn
          50          55          60

Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu
65          70          75          80

Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Val Arg Leu
          85          90          95

Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg
          100          105
  
```

<210> 28
 <211> 113

<212> PRT
 <213> Homo sapiens

<400> 28

```
Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala
1          5          10          15

Ile Met Leu Val Trp Arg Ala Ala Asn His Arg Tyr Ala Asn Val
          20          25          30

Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile
          35          40          45

Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn
          50          55          60

Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met
65          70          75          80

Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His
          85          90          95

Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe
          100          105          110
```

Leu

<210> 29
 <211> 106
 <212> PRT
 <213> Gallus gallus

<400> 29

```
Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn
1          5          10          15

Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu
          20          25          30

Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val
          35          40          45

Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met
          50          55          60

Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu
65          70          75          80

Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys
          85          90          95

Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu
          100          105
```

<210> 30
 <211> 112

<212> PRT
 <213> Gallus gallus

<400> 30

```

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala
1      5      10      15
Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe
      20      25      30
Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile
      35      40      45
Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly
      50      55      60
Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala
      65      70      75      80
Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp
      85      90      95
Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu
      100      105      110

```

<210> 31
 <211> 112
 <212> PRT
 <213> Gallus gallus

<400> 31

```

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr
1      5      10      15
Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe
      20      25      30
Phe Gln Leu Pro Ser Lys Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile
      35      40      45
Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His
      50      55      60
Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe
      65      70      75      80
Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg
      85      90      95
Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala
      100      105      110

```

<210> 32
 <211> 113
 <212> PRT
 <213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala
 1 5 10 15
 Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu
 20 25 30
 Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile
 35 40 45
 Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn
 50 55 60
 Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met
 65 70 75 80
 Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn
 85 90 95
 Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu
 100 105 110

Gly

<210> 33

<211> 115

<212> PRT

<213> Gallus gallus

<400> 33

Lys Lys Ser Lys Tyr Met Thr Pro Met Gln Gln Lys Leu Asn Glu Val
 1 5 10 15
 Tyr Glu Ala Val Lys Asn Tyr Thr Asp Lys Arg Gly Arg Arg Leu Ser
 20 25 30
 Ala Ile Phe Leu Arg Leu Pro Ser Arg Ser Glu Leu Pro Asp Tyr Tyr
 35 40 45
 Ile Thr Ile Lys Lys Pro Val Asp Met Glu Lys Ile Arg Ser His Met
 50 55 60
 Met Ala Asn Lys Tyr Gln Asp Ile Asp Ser Met Val Glu Asp Phe Val
 65 70 75 80
 Met Met Phe Asn Asn Ala Cys Thr Tyr Asn Glu Pro Glu Ser Leu Ile
 85 90 95
 Tyr Lys Asp Ala Leu Val Leu His Lys Val Leu Leu Glu Thr Arg Arg
 100 105 110

Glu Ile Glu
 115

<210> 34

<211> 112

<212> PRT

<213> Description of unknown organism, see Jeanmougin et al., Trends in Biochem. Sci. 22:151-153 (1997)

<400> 34

```

His Asn Ala Pro Phe Asp Lys Thr Lys Phe Asp Glu Val Leu Glu Ala
1                               5                               10                               15

Leu Val Gly Leu Lys Asp Asn Glu Gly Asn Pro Phe Asp Asp Ile Phe
                20                25                30

Glu Glu Leu Pro Ser Lys Arg Tyr Phe Pro Asp Tyr Tyr Gln Ile Ile
35                40                45

Gln Lys Pro Ile Cys Tyr Lys Met Met Arg Asn Lys Ala Lys Thr Gly
50                55                60

Lys Tyr Leu Ser Met Gly Asp Phe Tyr Asp Asp Ile Arg Leu Met Val
65                70                75                80

Ser Asn Ala Gln Thr Tyr Asn Met Pro Gly Ser Leu Val Tyr Glu Cys
85                90                95

Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly
100                105                110

```

<210> 35

<211> 113

<212> PRT

<213> Description of unknown organism, see Jeanmougin et al., Trends in Biochem. Sci. 22:151-153 (1997)

<400> 35

```

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1                               5                               10                               15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20                25                30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35                40                45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50                55                60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65                70                75                80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85                90                95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100                105                110

```

Ser

<210> 36

<211> 113
 <212> PRT
 <213> Homo sapiens

<400> 36

```
Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1          5          10          15
Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20          25          30
Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35          40          45
Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50          55          60
Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65          70          75          80
Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85          90          95
Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100         105         110
```

Ser

<210> 37
 <211> 114
 <212> PRT
 <213> Homo sapiens

<400> 37

```
Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1          5          10          15
Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20          25          30
Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35          40          45
Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50          55          60
Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65          70          75          80
Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr
85          90          95
Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100         105         110
Ile Glu
```

<210> 38
 <211> 113
 <212> PRT
 <213> Gallus gallus

<400> 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp
 1 5 10 15
 Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val
 20 25 30
 Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu
 35 40 45
 Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn
 50 55 60
 His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu
 65 70 75 80
 Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu
 85 90 95
 Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile
 100 105 110

Ala

<210> 39
 <211> 114
 <212> PRT
 <213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
 1 5 10 15
 Ala Val Ile Lys Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu
 20 25 30
 Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
 35 40 45
 Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
 50 55 60
 Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
 65 70 75 80
 Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr
 85 90 95
 Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
 100 105 110
 Ile Glu

<210> 40
 <211> 105
 <212> PRT
 <213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
 1 5 10 15
 Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
 20 25 30
 Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr
 35 40 45
 Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
 50 55 60
 Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
 65 70 75 80
 Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
 85 90 95
 Arg Phe Phe Glu Thr Arg Met Asn Glu
 100 105

<210> 41
 <211> 105
 <212> PRT
 <213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
 1 5 10 15
 Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
 20 25 30
 Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr
 35 40 45
 Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
 50 55 60
 Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
 65 70 75 80
 Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
 85 90 95
 Arg Phe Phe Glu Thr Arg Met Asn Asp
 100 105

<210> 42
 <211> 108

<212> PRT
<213> Mus sp.

<400> 42

```

Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu
1           5           10          15

Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro
          20           25           30

Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu
          35           40           45

Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys
          50           55           60

Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala
65           70           75           80

Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu
          85           90           95

Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr
          100          105

```

<210> 43
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic bromodomain peptide

<220>
<221> Xaa
<222> (1)..(1)
<223> Xaa can be any single amino acid

<220>
<221> Xaa
<222> (2)..(2)
<223> Xaa can be any single amino acid

<220>
<221> Xaa
<222> (4)..(6)
<223> Xaa is a maximum of three amino acids. Each of these can be any amino acid. One may be missing.

<220>
<221> Xaa
<222> (6)..(13)
<223> Xaa is a maximum of eight amino acids. Each of these can be any amino acid. One, two, or three may be missing.

<220>
<221> Xaa

```
<222> (7)..(7)
<223> Xaa is a single amino acid that can be Pro, Lys, or His.
```

```
<220>
<221> Xaa
<222> (8)..(8)
<223> Xaa is a single amino acid that can be any amino acid.
```

```
<220>
<221> Xaa
<222> (10)..(10)
<223> Xaa is a single amino acid that can be a Tyr, Phe, or His.
```

```
<220>
<221> Xaa
<222> (11)..(15)
<223> Xaa is five amino acids. Each of these can be any amino acid.
```

```
<220>
<221> Xaa
<222> (13)..(13)
<223> Xaa is a single amino acid that can be Met, Ile, or Val.
```

<400> 43

Xaa Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Asp
1 5 10 15

<210>	44
<211>	20
<212>	PRT
<213>	Artificial Sequence

<220>
<223> synthetic bromodomain peptide

<400> 44

Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr
1 5 10 15

Glu Val Ile Arg
20

```
<210> 45
<211> 101
<212> PRT
<213> Human immunodeficiency virus type 1 Tat protein
```

<400> 45

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1 5 10 15

Gln Pro Lys Thr Ala Ser Asn Asn Cys Tyr Cys Lys Arg Cys Cys Leu
20 25 30

<220>
 <221> Xaa
 <222> (4)..(7)
 <223> Xaa is a maximum of four amino acids. Each of these can be any amino acid. One or two may be missing.

<220>
 <221> Xaa
 <222> (6)..(9)
 <223> Xaa is a maximum of four amino acids. Each of these can be any amino acid. One or two may be missing.

<220>
 <221> Xaa
 <222> (8)..(10)
 <223> Xaa is a maximum of three amino acids. Each of these can be any amino acid. One or two may be missing.

<220>
 <221> Xaa
 <222> (10)..(10)
 <223> Xaa is a single amino acid that is either Ile, Leu, Met, or Val.

<400> 48

Phe Xaa Val Xaa Glu Xaa Tyr Xaa Val Xaa
 1 5 10

<210> 49
 <211> 62
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic bromodomain peptide

<400> 49

Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val
 1 5 10 15

Ile Arg Phe Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn
 20 25 30

Arg Tyr Tyr Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val
 35 40 45

Phe Thr Asn Cys Lys Glu Tyr Asn Ala Ala Glu Ser Glu Tyr
 50 55 60

<210> 50
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic HIV-1 Tat peptide

<220>
 <221> Xaa

<222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK).
 <400> 50
 Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Cys
 1 5 10
 <210> 51
 <211> 11
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> synthetic HIV-1 Tat peptide
 <220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK).
 <400> 51
 Ser Ala Gly Arg Xaa Lys Arg Arg Gln Arg Cys
 1 5 10
 <210> 52
 <211> 11
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> synthetic HIV-1 Tat peptide
 <220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK).
 <400> 52
 Ser Tyr Gly Ala Xaa Lys Arg Arg Gln Arg Cys
 1 5 10
 <210> 53
 <211> 11
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> synthetic HIV-1 Tat peptide
 <220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK).
 <400> 53
 Ser Tyr Gly Arg Xaa Ala Arg Arg Gln Arg Cys
 1 5 10

<210> 54
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic HIV-1 Tat peptide

<220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK).

<400> 54

Ser Tyr Gly Arg Xaa Lys Ala Arg Gln Arg Cys
 1 5 10

<210> 55
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic HIV-1 Tat peptide

<220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK)

<400> 55

Ser Tyr Gly Arg Xaa Lys Arg Ala Gln Arg Cys
 1 5 10

<210> 56
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic HIV-1 Tat peptide

<220>
 <221> Xaa
 <222> (5)..(5)
 <223> Xaa is an acetylated lysine (AcK)

<400> 56

Ser Tyr Gly Arg Xaa Lys Arg Arg Ala Arg Cys
 1 5 10

<210> 57
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>

<223> synthetic HIV-1 Tat peptide

<220>

<221> Xaa

<222> (6)..(6)

<223> Xaa is an acetylated lysine (AcK)

<400> 57

Ser Tyr Gly Arg Lys Xaa Arg Arg Gln Arg Cys
1 5 10

<210> 58

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic HIV-1 Tat peptide

<220>

<221> Xaa

<222> (7)..(7)

<223> Xaa is an acetylated lysine (AcK)

<400> 58

Thr Asn Cys Tyr Cys Lys Xaa Cys Cys Phe His
1 5 10

<210> 59

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic histone H4 AcK16 peptide

<220>

<221> Xaa

<222> (16)..(16)

<223> Xaa is an acetylated lysine (AcK)

<400> 59

Ser Gly Arg Gly Lys Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Xaa
1 5 10 15

Arg His Arg Lys
20

<210> 60

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic HIV-1 Tat peptide

<400> 60

Ser	Tyr	Gly	Arg	Lys	Lys	Arg	Arg	Gln	Arg	Cys
1				5				10		